INSTRUCTOR: Tim Hulshof
CONTACT: thulshof@math.ubc.ca
COURSE WEBPAGE: www.math.ubc.ca/~thulshof/teaching
LECTURES: M-W-F 10:00–11:00, Buchanan A203
OFFICE HOURS: M 11:00–12:00 at LSK 303c, Th 16:00–17:00 at LSK 303b (or by appointment)

TEXTBOOK: Either *Multivariate Calculus* or *Early Trancendentals* by James Stewart. The 7th edition is preferred, but the 5th or 6th are also fine. (But exercises will be assigned from the 7th edition.)

COURSE OUTLINE: The course will be based on Chapters 13 and 16 of Stewart's book. The following topics will be discussed:

- PART I: FUNCTIONS OF ONE VARIABLE. (*Chapter 13, 10 lectures and 3 homework assignments.*)
    - §1) Vector functions and space curves.
    - §2) Derivatives and integrals.
    - §3) Arc length and curvature.
    - §4) Velocity and acceleration.
- PART II: VECTOR FIELDS IN 3D AND GREEN'S THEOREM IN 2D. (*First half of Chapter 16, 10 lectures and 3 homework assignments.*)
    - §1) Vector fields.
    - §2) Line integrals.
    - §3) The Fundamental Theorem for line integrals.
    - §4) Green's Theorem.
    - §5) Curl and divergence.
- PART III: SURFACES, STOKES' THEOREM, THE DIVERGENCE THEOREM.(*Second half of Chapter 16, 13 lectures and 4 homework assignments.*)
    - §6) Parametric surfaces.
    - §7) Surface integrals.
    - §8) Stokes' Theorem.
    - §9) The Divergence Theorem.

GRADING SCHEME: The final grade is constituted as follows:

50% Final exam grade
20% Midterm exam #1 grade
20% Midterm exam #2 grade
10% Homework grade

<u>Midterms:</u> There will be two 50 minute midterm exams during regularly scheduled classes on *Friday October 3rd* and on *Friday November 7th*.

<u>Homework assignments:</u> Weekly homeworks will be assigned on Wednesday and collected on the following Wednesday before the lecture starts. There will be no homeworks assigned in the weeks of the midterm exams (i.e., on October 1st and on November 5th). In total, there will be 10 homeworks. The final homework grade will be calculated as the average grade of the 8 highest weekly homework grades.

<u>Missed midterms & homeworks:</u> Missed midterms and homeworks will receive a zero grade. Homeworks that are handed in late will not be accepted.

There are no exceptions for missed homework assignments, but for missed midterms an exception to the above considerations may be granted in the following two cases:

- Prior consent of the instructor.
- Medical emergency. In the case of a medical emergency, the instructor must be notified as soon as possible and presented with a doctor's note immediately upon return to UBC.

When a test is missed or a homework is not handed in, and if an exception has been granted by the instructor, there will be no make-up test or homework: the final exam grade will be used instead.